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Patients' attitudes towards cost feedback to doctors to prevent unnecessary testing: a qualitative focus group study

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## **Abstract**

**Objectives:** There is a need to improve efficiency in healthcare delivery without compromising quality of care. One approach is the development and evaluation of behavioural strategies to reduce unnecessary use of common tests. However, there is an absence of evidence on patient attitudes to the use of such approaches in the delivery of care. Our objective was to explore patient acceptability of a nudge-type intervention that aimed to modify blood test requests by hospital doctors.

**Study design:** Single-centre qualitative study.

**Methods:** The financial costs of common blood tests were presented to hospital doctors on results reports for one year at a hospital. Focus group discussions were conducted with recent inpatients at the hospital using a semi-structured question schedule. Discussions were transcribed and analysed using qualitative content analysis to identify and prioritise common themes explaining attitudes to the intervention approach.

**Results:** Three focus groups involving 17 participants were conducted. Patients were generally apprehensive about the provision of blood test cost feedback to doctors. Attitudes were organised around themes representing beliefs about blood tests, the impact on doctors and their autonomy, and beliefs about unnecessary testing. Patients thought that blood tests were important, powerful and inexpensive, and cost information could place doctors under additional pressure.

**Conclusion:** The findings identify predominantly positive beliefs about testing and negative attitudes to the use of financial costs in the decision-making of hospital doctors. Public discussion and education about the possible overuse of common tests may allow more resources to be allocated to evidence-based healthcare, by reducing the perception that such strategies to improve healthcare efficiency negatively impact on quality of care.

**Keywords:** hospital care; unnecessary tests; healthcare costs; patient attitudes; focus groups

There is a need to improve efficiency and reduce waste in healthcare delivery.<sup>1</sup> A significant proportion of medical testing is estimated to be unnecessary, leading to patient harms and wasted resources.<sup>2</sup> We have previously demonstrated that presenting financial costs of tests to requesting hospital physicians can reduce demand for tests.<sup>3</sup> This is an example of a cheap and easily implemented behavioural strategy that can reduce unnecessary testing without restricting freedom of choice in individual doctors.

It is important to understand patients' views on the use of cost information to influence doctors' decisions about the care they provide. Patients could be apprehensive of attaching prices to individual tests, which may be a barrier to adoption and scaling up of this approach in the NHS. Awareness of attempts to limit diagnostic testing may evoke concerns about quality of care and reduce patient satisfaction, however there is an absence of evidence about patients' perspective. We conducted a single-centre qualitative study to explore this.

An intervention had been implemented at a busy teaching hospital in England in February 2017, displaying phlebotomy and laboratory costs, and the total annual spend on the test by the hospital, on the results reports of three common blood tests (full blood count, urea and electrolyte and liver function tests). A 12 month controlled evaluation found the intervention was associated with a 3% reduction in demand for full blood count tests, a 2% reduction in urea and electrolyte tests and no change in liver function tests.<sup>4</sup>

An invitation pack was sent to a random sample of adults who had been inpatients at the same hospital during the previous two years and had opted in to a patient research panel. Focus groups took place at the hospital, facilitated using a semi-structured question schedule, including a brief outline of the intervention that stated that it did not restrict a doctor from ordering a test (see online supplement). Groups were audio and video recorded. Participants were given a £40 multi-store gift card and reimbursed travel costs.

Recordings were transcribed and analysed with NVivo software using qualitative content analysis, a method for systematically describing the meaning of qualitative data.<sup>5</sup> The final coding frame, including example quotes and frequencies of participants in each category, form the results of the analysis.

A sample of 397 patients were invited, 28 (7%) responded and 17 gave informed consent and participated. Three focus groups were held in October 2018 with a mean duration of 70 minutes and a participant range of 5-6. Participants were aged 27-81 years (mean 57) and 11 (65%) were men.

Ten participants expressed negative attitudes towards cost feedback for doctors, four expressed positive attitudes and three expressed mixed attitudes. Two groups contained a combination of negative/positive/mixed attitudes whilst only negative attitudes were reported in the other group. Findings are described below and representative quotes from each coding frame category are shown in Table 1.

*Theme 1. Beliefs about blood tests.* Participants viewed blood tests as an important and valuable tool in screening for and diagnosing disease. Some described personal experiences that caused them to feel that they owed their health to having had a blood test. This contributed to a fear that things could be missed if fewer tests were done. Participants believed that the cost of a blood test was small, that blood testing saves money through earlier diagnosis and that such tests 'prove their worth'.

*Theme 2. Impact on doctors and their autonomy.* Participants trusted the judgment of doctors about whether or not a test is needed. Most felt that doctors should not know about costs and should only consider what is in the patient's best interests. Cost information was seen to place additional pressure on doctors, to whom they were empathetic about the pressures experienced in their work. In contrast, some participants felt that cost feedback could be useful in reducing unnecessary tests.

*Theme 3. Beliefs about unnecessary testing.* There was an awareness that doctors sometimes order unnecessary tests, including a view that the demand for tests was often driven by the patient. Older adults appeared more concerned about test costs than younger participants. However, there was resistance to the use of costs in decision-making and a feeling that other areas of the NHS should be targeted for cost savings, including management, administration, procurement and overuse of services by patients.

There was agreement in one of the groups that older adults are less concerned than others about cost feedback to doctors because they may be old enough to remember a time before the NHS existed, they 'like to know what things cost', are more likely to have received health treatment and may be more anxious about being a burden to doctors.

Although there were differing views expressed, the group interaction involved no direct conflict, with participants' views grounded strongly in their own experiences of the health service. As all participants were recent hospital inpatients and several described their conditions or treatment, this created a dynamic of tolerance and respect for each other's views. Consensus was evident on some points, such as the value of blood tests and the small perceived cost of a blood test.

**Table 1.** Results of qualitative content analysis

Coding category	Representative quotes and frequency of participants expressing view	
<b>Theme 1: Beliefs about blood tests</b>		
Blood tests are an important and valuable tool	Blood tests are essential and they're becoming more essential, and I think they're becoming much more central in understanding the body's function and the body's health. I have no doubt at all that blood tests are absolutely important. Really important. (FG2R3, man, 81)  I think a blood test gives a lot of information on the performance of different parts of the body. [...] My concern would be if it put the doctor off from doing the blood test that he would have done otherwise, with the risk that they miss something. (FG3R5, man, 75)	16
Blood testing saves money	I think it's a cost saving in the end, because without those more people would be going longer before they receive treatment for something, and the longer you wait the more invasive and the more difficult the treatment and the more treatment that you need. (FG1R5, woman, 49)  I would have thought it saves the NHS money. If you're given a blood test for whatever and it comes back negative, then you know you don't have to do anything more. (FG1R2, man, 76)	9
Blood tests inform how I understand and feel about my health	There's blood tests that I would like them to do more often because they would inform how I feel. It's really important to understand the treatment you're going through. (FG1R6, woman, 61)  I know it's expensive, but if it's a negative result then it's nice to know. It gives a bit of reassurance to the patient, and that in itself is good for their positive mindset and therefore makes them feel better. (FG2R4, man, 35)	8
<b>Theme 2: Impact on doctors and their autonomy</b>		
Doctors know when to do a test	For me personally it wouldn't make a difference, I trust their judgement to say what's best really. (FG3R4, man, 32)	11
Doctors should not think about costs	When I am being treated I do not want my doctor thinking of budget, I want my doctor thinking wholly of what is in my best interest. (FG1R5, woman, 49)  You can't start interfering with a doctor's clinical views in the interests of economy. But if you can persuade them, if you're having a blood test or some other test just for the sake of it, then that should be discouraged. (FG3R2, man, 75)	7
Costs place additional pressure on doctors	I think they're under enough pressure anyway so why should they be made to feel guilty if they think someone needs a blood test? I wouldn't like them to see the price, then they feel pressured. (FG1R1, woman, 37)	6
<b>Theme 3: Beliefs about unnecessary testing</b>		
Doctors do unnecessary tests	When I was in hospital I was in for two weeks and I'm sure I had blood test nearly every day. For what reason? I don't think I needed them every day. I was having them a lot and I just think is this really necessary? (FG2R2, woman, 27)  Sometimes I feel doctors do it just to pass the time a little to keep the patient there, to keep the patient happy. Whereas sometimes the blood tests aren't necessarily done for a reason. (FG1R4, woman, 27)	10
Cost savings should be made in other areas	I do feel that the blood tests should be left alone, but there's an awful lot of other administration costs that could really be cut back on. (FG2R3, man, 81)	11

\*Participant ID, gender, age (years)

The findings highlight attitudes and beliefs that should be addressed in order to improve the acceptability to patients of interventions that provide transparent financial cost information to doctors of common diagnostic tests. We found an awareness of the possibility of unnecessary testing but a preference for cost savings in other areas of healthcare. Blood tests were viewed as a powerful, inexpensive and cost-effective tool that reassured and informed patients. There was a fear that fewer tests could mean things were missed, often based on personal stories. This is consistent with reported attitudes in primary care, where patients regard blood tests as a useful screening instrument that fulfils a need for objective validation of what is happening inside their bodies, reinforced by the social environment and the media.<sup>6,7</sup> Stories of unnecessary testing may be needed to aid understanding in patients.

Older adults were more concerned about test costs than younger participants, highlighting possible generational differences in attitudes towards the role of the NHS.

The judgement of doctors was highly trusted and most participants felt that costs should not be a factor in testing decisions in the NHS. There is limited research into patient views on this topic in publicly funded health systems but a program to reduce overuse in a hospital in Canada reported it had been important to prioritise harm reduction over cost-containment because the latter does not resonate with clinicians or patients.<sup>9</sup> A focus group study in the USA to examine the willingness of patients to consider and discuss costs with clinicians found a preference for the best care regardless of cost, with individualistic attitudes expressed in contrast to the concerns about the impact on doctors we observed.<sup>10</sup> Our patients repeatedly described the pressures that doctors work under and the additional burden that cost feedback could place on them. This indicates that the use of cost feedback in decision-making could undermine trust in the doctor-patient relationship. A greater emphasis on shared decision-making may help to prevent cost feedback damaging patient satisfaction and perceived quality of care.

In conclusion, patients were generally apprehensive about the provision of cost feedback to doctors. Discussion and patient education about overuse of tests may increase acceptability of the use of cost feedback to improve efficiency and reduce waste in healthcare delivery.

## **Author statements**

## **Ethical approval**

The study was approved by Wales Research Ethics Committee 7, ref. 17/WA/0393.

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## **Competing interests**

All authors have no conflicts of interest to declare.

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## Online supplement. Focus group question schedule.

Set the context of the discussion: Doctors often decide that a patient should have a test during their care, for example a blood test, a scan or other investigation. At the moment doctors are not normally provided with any information about how much money a test like this costs the NHS to carry out. Some people have said that doctors should be able to see this cost information. If they did see this, it would not restrict them from ordering the test, it would just allow them to know how much the test costs the NHS. A doctor may or may not reduce the number of tests they order for patients, or order different tests instead, it would be up to them to decide. The doctor could also carry on ordering tests for patients exactly as they did before they had this cost information. No cost information would be given to patients.

### *General opinions about the concept of cost feedback in a hospital setting*

1. I just wanted to start with a general discussion about the idea that hospital doctors could be provided with feedback on the price of the tests that they order for patients during their hospital stay. So, they would know how much they have spent on these tests. What do you think about that? [Prompt: does it depend on the cost of the test involved or the potential seriousness of the condition?]
2. Should the doctor order multiple tests just to cover all bases, regardless of knowing the cost?
3. Do you think some doctors might request unnecessary tests?
4. Do you think some patients might request unnecessary tests?
5. What impact do you think cost feedback might have on the provision of patient health care?
6. What impact do you think cost feedback might have on the NHS?
7. Do you think patients should be made aware that doctors can see the cost information about the tests they order? Why/why not?
8. Would you feel any differently about the care you receive if you knew that doctors could see this cost information? If so, how? [Prompts: change your trust in the doctor? Make you feel like a burden?]

### *Knowledge about blood test costs*

9. Have a guess how much an NHS common blood test costs? [Prompts: who is involved? doctor, nurse, lab, admin]
10. The average cost of an NHS blood test is £X. In recent years orders for these tests are increasing and often the tests come back negative. What do you think about that in terms of the costs involved? [Prompt: are the tests worth it even if they come back negative? If so, why?]
11. Is the cost of the blood test something a patient should be concerned about? Why/why not?

### *Opinions about a specific blood test cost feedback intervention study*

12. Research suggests that regular feedback on the costs of some tests can reduce the demand for orders by doctors and therefore reduce the NHS costs. What do you think about doctors receiving cost feedback in relation to common blood tests like a full blood count? For example, the cost of the test would appear on the test result report.
13. Do you think doctors should be shown the cost of the full blood count test? Please explain why they should or shouldn't.
14. If you were in charge of providing this cost information to doctors, are there any changes you would make to how it is done?
15. Do you think there are any potential risks of making the cost of blood tests available to doctors? [Prompts: risks to the patient]
16. Apart from cost feedback what other things do you think a doctor could do instead to reduce the demand for blood tests? [Prompts: increased consultation time, better quality consultations/examinations]
17. The savings made as a direct result of a reduced demand for blood tests might mean more NHS budget is available, for example, to train more doctors or nurses. What do you think about that?

### *Opinions about the doctor's right to treat his/her patient without considering financial costs:*

18. What do you feel about just allowing doctors to treat their patient as they see fit? [e.g. testing for whatever they want, when they want]
19. How might feedback on costs affect this autonomy, if at all?
20. What do you think about doctors not taking blood test costs into consideration?
21. Finally, if there is anything you think we have missed please feel free to bring it up now.

**SESSION END**